

What is claimed is:

1. A method for producing a gearset, comprising the steps of:  
producing a first member having a first surface, and a second surface  
5 axially spaced from the first surface;  
forming a first set of pairs of axially aligned, angularly spaced holes in  
the first surface and second surface;  
placing, in each of the pairs of holes of the first set, a short pinion shaft  
having a short pinion supported thereon;  
10 forming a second set of axial, angularly spaced holes in the first surface;  
placing a long pinion shaft in each hole of the second set and a long  
pinion on each long pinion shaft;  
forming a second member having a third set of holes, each hole aligned  
with a hole of the second set;  
15 placing the second member such that each long pinion shaft fits in a hole  
of the second set; and  
securing the first and second members mutually.
2. The method of claim 1, further comprising the step of:  
20 securing the first member to a first pinion shaft.
3. The method of claim 1, wherein the step of forming a first set of  
pairs of axially aligned, angularly spaced holes, further comprises:  
locating each hole of the first set substantially equally spaced angularly  
25 about an axis.
4. The method of claim 1, wherein:  
the step of forming a first set of pairs of axially aligned, angularly  
spaced holes, further comprises locating each hole of the first set substantially equally  
30 spaced angularly about an axis; and

the step of forming a second set of axial, angularly spaced holes in the first surface, further comprises locating each hole of the second set substantially equally spaced angularly about the axis and located angularly between the hole pairs of the first set.

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5. The method of claim 1, wherein the step of placing a short pinion shaft having a short pinion supported thereon, further comprises:

locating each short pinion on a short pinion shaft between the first surface and second surface.

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6. The method of claim 1, wherein the step of securing the first and second members mutually, further comprises:

securing a first end of a long pinion shaft to the first member surface;

and

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securing a second end of the long pinion shaft to the second member.

7. The method of claim 1, wherein the step of placing a long pinion shaft in each hole of the second set and a long pinion on each long pinion shaft, further comprises:

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engaging gear teeth on each long pinion with gear teeth on two short pinions located angularly between each long pinion.

8. The method of claim 1, wherein the step of placing a short pinion shaft in each of the pairs of holes of the first set, further comprises:

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providing on the short pinion shafts a length portion that extends through the second surface toward the second member; and

using the length portion to guide the placement of the second member such that each long pinion shaft fits in a hole of the second set.

9. A method for producing a gearset, comprising the steps of:  
producing a first member having a first set of axial directed, angularly spaced holes, and a second set of axially directed, angularly spaced holes, a third set of axially directed, angularly spaced holes, each hole of the third set aligned with a hole  
5 of the first set and spaced axially therefrom, and an axial pocket aligned with each hole of the second set;  
placing, in the aligned holes of the first set and third set, a short pinion shaft having a short pinion supported thereon;  
placing a long pinion shaft in each hole of the second set;  
10 inserting axially through each pocket a long pinion onto each long pinion shaft;  
forming a second member having a fourth set of holes, each hole aligned with a hole of the second set;  
placing the second member such that each long pinion shaft fits in a hole  
15 of the fourth set; and  
securing the first and second members mutually.

10. The method of claim 9, wherein the step of inserting axially through each pocket a long pinion onto each long pinion shaft, further comprises:  
20 engaging gear teeth on each long pinion with gear teeth on two short pinions located angularly between each long pinion.

11. The method of claim 9, wherein the step of placing a short pinion shaft in each of the aligned holes of the first set and third set, further comprises:  
25 providing on the short pinion shafts a length portion that extends through the second surface toward the second member; and  
using the length portion to guide the placement of the second member such that each long pinion shaft fits in a hole of the fourth set.

12. The method of claim 9, further comprising the step of:  
securing the first member to a first pinion shaft at a hole of the first set.

13. The method of claim 9, wherein the step of forming a first set of  
5 pairs of axially aligned, angularly spaced holes, further comprises:  
locating each hole of the first set substantially equally spaced angularly  
about an axis.

14. The method of claim 9, wherein:  
10 the step of forming a first set of pairs of axially aligned, angularly  
spaced holes, further comprises locating each hole of the first set substantially equally  
spaced angularly about an axis; and  
the step of forming a second set of axial, angularly spaced holes, further  
comprises locating each hole of the second set substantially equally spaced angularly  
15 about the axis and located angularly between mutually aligned holes of the first set and  
third set.

15. The method of claim 9, wherein the step of placing a short pinion  
shaft having a short pinion supported thereon, further comprises:  
20 locating each short pinion on a short pinion shaft between the first  
surface and second surface.

16. The method of claim 9, wherein the step of securing the first and  
second members mutually, further comprises:  
25 securing a first end of a long pinion shaft to the first member surface;  
and  
securing a second end of the long pinion shaft to the second member.